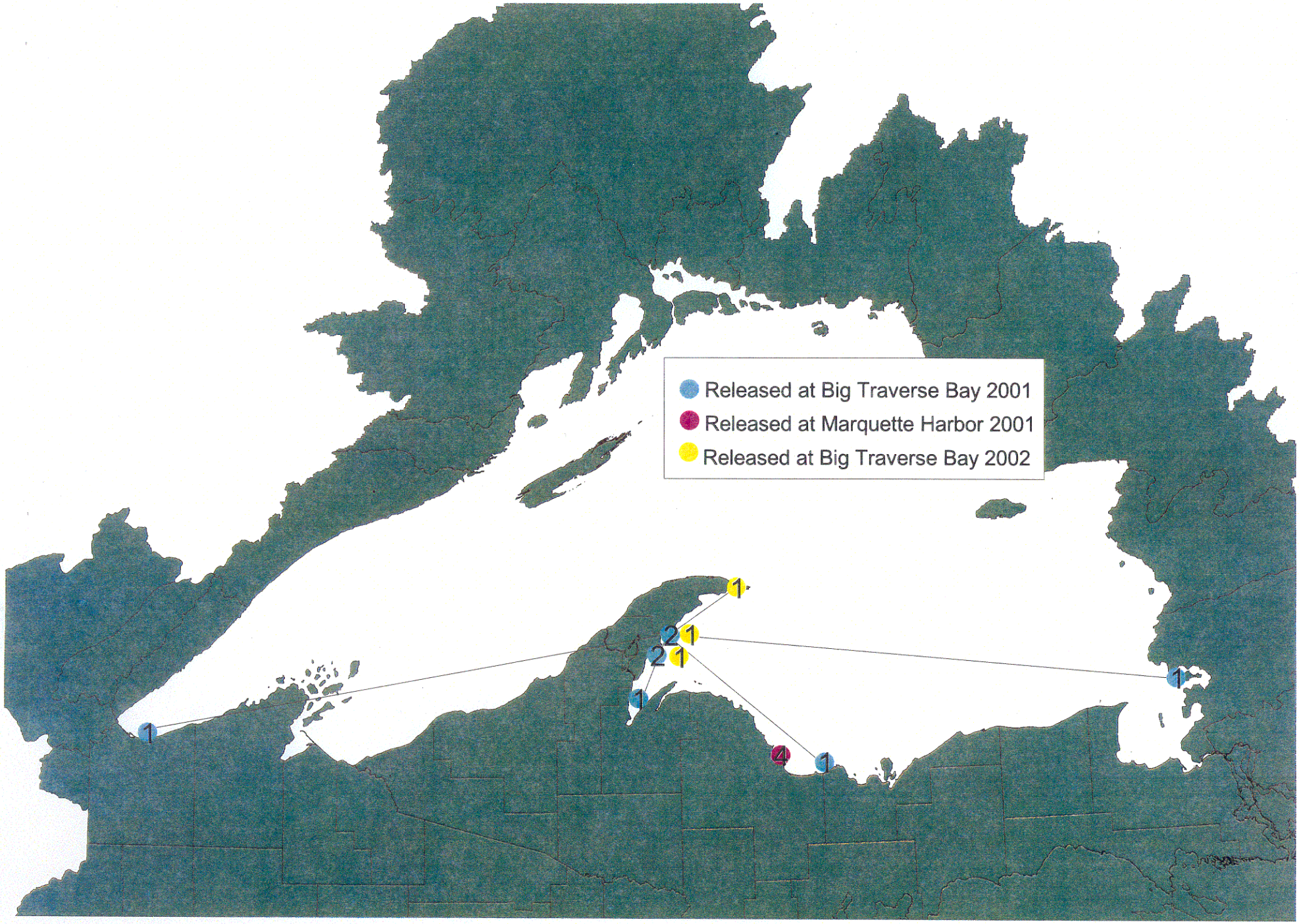


Figure 2. Location of recapture for 15 of 124 lake trout implanted with internal depth/thermal archival tags in Lake Superior.

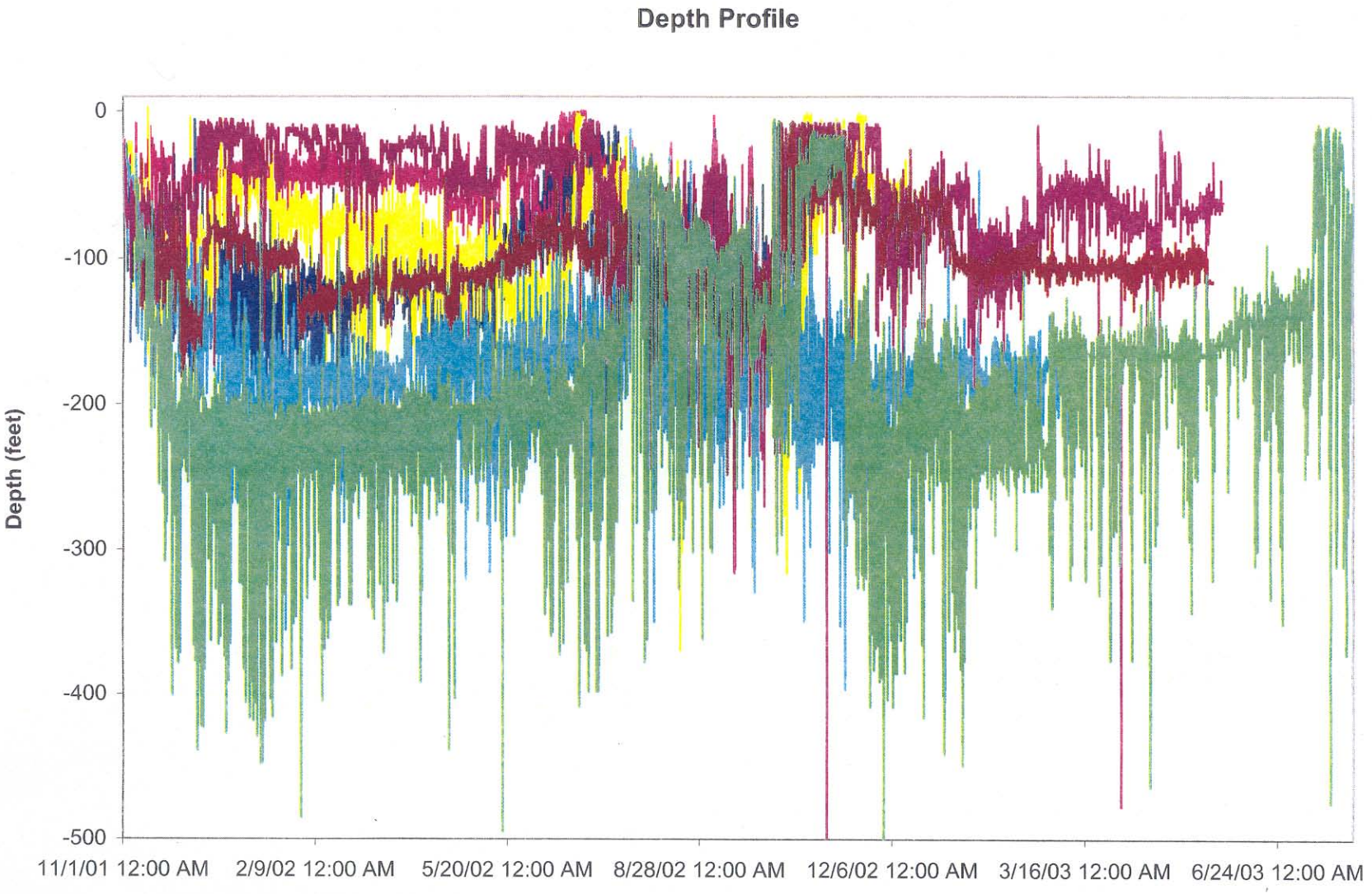


Figure showing depth recordings averaged every 30 minutes for lake trout tagged during 2001 with archival tags #275, #248, #249, #701, #731, and #790.

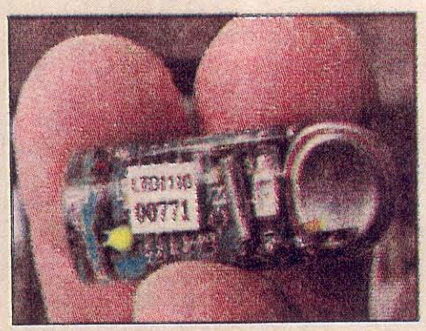
COVERING THE NORTHLAND'S LOCAL NEWS FOR 133 YEARS

Duluth News Tri

WWW.DULUTHNEWSTRIBUNE.COM

Thursday JUNE 5, 2003

Lake trout angler gets quite a byte



GREAT LAKES INDIAN FISH AND WILDLIFE COMMISSION

Ed Leoso of the Bad River Ojibwe Natural Resources Department sutures a lake trout that was implanted with a tiny computer (top photo). A total of 124 fish were fitted with the units, including one caught Saturday near Duluth. The computers record depth and temperature data.

FISH: A tagged trout caught Saturday by a Duluth angler held a tiny computer that recorded valuable data about its 150-mile journey in Lake Superior.

BY JOHN MYERS
NEWS TRIBUNE STAFF WRITER

When Larry Mattson boated an average lake trout during last weekend's Jaws Fishing Derby, he didn't expect it would net him any cash.

Indeed, the six-pound lake trout didn't win Mattson any contest prizes. But the Duluth angler still earned $100 for his catch.

"We caught a wanted fish," Mattson joked. "The tag said 'reward if returned.' "

It's not that researchers wanted the lake trout so much as what was inside — a $400 microcomputer that had been gathering valuable research data for the past 19 months.

The fish hit just below the surface on a green and black Bomber-brand lure trolled behind the boat. Mattson noticed an orange tag almost immediately.

Catching a tagged fish isn't that unusual. The thin, spaghetti-noodle tags are stuck in the back of fish as researchers try to track fish movements. If anglers cooperate, researchers know where the fish was tagged and where it was caught, but not much else.

"We caught a wanted fish. The tag said 'reward if returned.' "

LARRY MATTSON of Duluth.

But in small print on this tag was an unusual note: $100 reward for fish and its internal tag — the microcomputer.

Mattson hadn't paid much attention to the writing, but found the tiny computer — smaller than a pinky finger — in the fish's belly cavity as he was cleaning the trout. It wasn't until after his catch

See **TROUT**, *Page* **8A**

JOHN MYERS / NEWS TRIBUNE

Larry Mattson (right) holds the microcomputer he found in a six-pound lake trout Saturday. Biologist Bill Mattes scanned the tiny computer and recovered 19 months of data that showed how deep the fish swam in Lake Superior and the water temperature every two hours since November 2001.

TROUT | *Data holds surprises for researchers*

From Page 1A

had been eaten that Mattson realized he was supposed to turn in the whole fish, too.

"It tasted good. Just like lake trout," Mattson said.

On Monday, Mattson called the phone number on the computer and explained what he had found. Bill Mattes, fisheries biologist for the Great Lakes Indian Fish and Wildlife Commission, was ecstatic.

It was only the eighth computer returned among 124 planted during November 2001 by the commission, an agency representing 11 Ojibwe tribes dedicated to protecting natural resources.

Mattes drove to Duluth from Odanah, Wis., to pick up the computer.

"This is huge for us. The (computer) tag is worth about $400. But it's the data inside that's the most valuable," Mattes said, later adding that he would still offer Mattson the $100 even though he ate the fish. "We won't dock him any."

Mattes brought his laptop computer to Mattson's Lincoln Park/West End shop Monday and, using an infrared pen, scanned the tiny fish computer. Within seconds, 19 months of data was recovered.

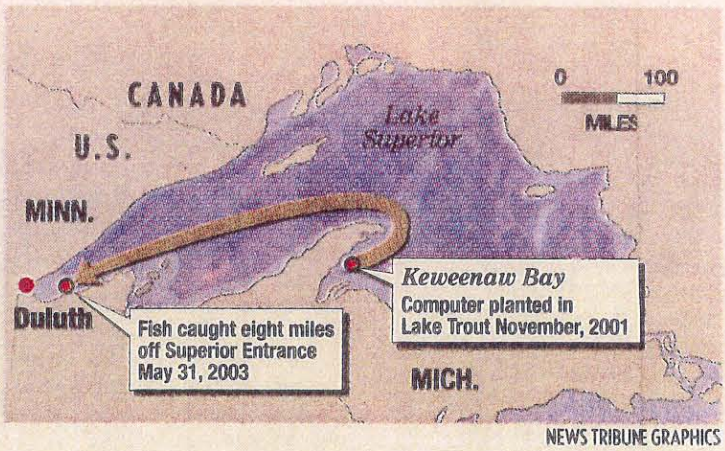
The computer had been recording both the depth and the water temperature every 15 seconds. It then averaged the data about every two hours. The data gives researchers real information on where lake trout go in the water column, up or down in the lake, and what temperature water they spend their time in.

It's the first time the new microcomputers have been used in Lake Superior, and the first time anywhere they have been used inside fish to record depth and temperature.

The lake trout originally were caught in nets in Traverse Bay, on the east side of the Keweenaw Peninsula.

They were anesthetized by clove oil in a water tank before fish surgeons in a mobile operating room went to work. They made a small incision in each fish's belly near their stomachs. Computers were placed inside, and the fish were sutured and released into recovery tanks until the anesthetic wore off. Then they were set free in the lake.

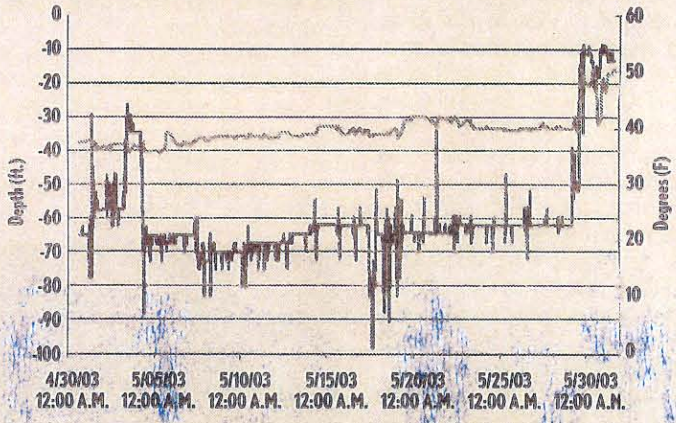
So far, five trout have been caught and returned by commercial netters and three by sport anglers like Mattson. Most have been caught within five miles of where they were originally netted, but one fish swam all the way to Ontario. And Mattson's fish swam more than 150 miles — all the way to the western end of



NEWS TRIBUNE GRAPHICS

DEPTH AND TEMPERATURE PROFILE FOR FISH 731

This graph shows the various depths where fish No. 731 – caught Saturday by Duluth's Larry Mattson – swam during May this year, right up to the day before it was caught. The graph also shows the temperature of the water wherever the fish swam.



formation recovered from Mattson's fish shows this particular trout spent much of the year near the bottom of Lake Superior. In summer months, however, the fish varied its depths greatly, often coming near the surface. That's probably in response to its food sources, Mattes said, as the trout hunts for smelt, alewives and other bait fish.

Very similar results have been recovered from the other seven trout computers. This trout, however, may have gone the deepest — it hit more than 400 feet at least once. The fish spent most of its time between 75 and 100 feet. And the water temperature it swam in ranged from 33 degrees to 66 degrees.

The temperature data also is helpful in bioenergetic studies of how fish process their food under various conditions — eating more in warmer water and less in colder water. The data also is expected to help researchers learn more about how lake trout react to lamprey, the parasitic suckers that attach themselves to trout.

"Using this data, along with information collected on what lake trout eat, we can get a good idea about how many prey fish — herring, chubs, smelt — need to be in the lake to support the lake trout numbers," Mattes said.

Depth data will be used to determine where lake trout travel during the year.

"Prior to these tags, we only knew where lake trout were when they were caught, not where they were throughout the year," Mattes said. Researchers didn't know how regularly they travel between water layers, that they are in near-freezing water during February and March and that they venture to depths of more than 300 feet.

The microcomputers don't record geographically where the fish has traveled before being caught. So far, there's no technology that will record satellite mapping information underwater — at least not in a unit small enough to fit inside of a fish.

The computers may be reused in more fish until the batteries run out.

The project was paid for with a $55,000 grant from the U.S. Fish and Wildlife Service. Anyone who catches a fish within an internal computer tag should call (715) 682-6619.

JOHN MYERS *covers the environment, natural resources and general news. He can be reached at (218) 723-5344 or at jmyers@duluthnews.com.*